

Using Jenkins in the Enterprise and the Cloud



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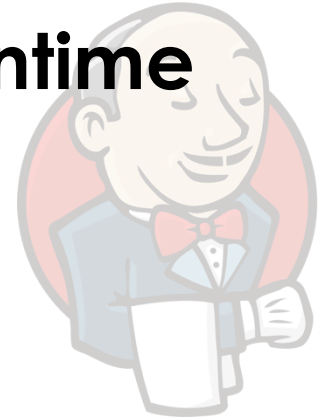
Day: A period of 24 hours, mostly misspent...



FLIGHT	DESTINATION	GATE #	STATUS
742	LOS ANGELES	A23	DELAYED
801	LONDON	C72	DELAYED
885	MADRID	B34	DELAYED
70	PARIS	A14	DELAYED
	TOKYO	C89	DELAYED
	HONG KONG	G12	DELAYED
	MIAMI	C5	DELAYED
	NEW YORK	D13	DELAYED
	RIO DEJANEIRO	A4	DELAYED
	SYDNEY	B22	DELAYED
		A22	DELAYED



CloudBees' Mission - Eliminate Downtime



- Eliminate time wasted due to
 - Jenkins issues
 - User issues
 - Lack of right tools...
- Improve efficiency for administrators and developers
- Rely on Jenkins...



Managing it pro-actively

“GOOD MANAGEMENT” OF JENKINS



“Good management” in Jenkins...



- Organize jobs better
- Secure your jobs
- Replicate good practices
- Respond quicker to requests
- Ensure compliance
- Bounce back from failures
- Prevent failures
- Everything should be as fast as possible...if not faster



Organize Jobs Better: Folders



- Huge list of all jobs on 1 page
- Views, views and more views
 - Not namespace aware
- Folders
 - Like OS folders
 - Namespace aware
 - Views within Folders
- Free
 - (Download from CloudBees Plugin Gateway from the Jenkins Update Center)

Folder Demo



Who has the keys to your castle?





Setting up the right authentication



- But lets secure your server machine first
 - OS, Firewall, Patches
 - Out of the scope of this talk...
- Setting up Authentication
 - Unix Pam
 - Internal Authentication
 - Primarily driven by your IT department
 - Out of scope of this talk...



Authorization Strategies



- Core Jenkins extension point for Authorization
- Responsible for deciding the permissions available to users.
- Can only select one.
- Default for clean install:

Unsecured

CloudBees' RBAC Plugin (plugin)

- A simple matrix of click-boxes
Row: role
Column: permission
- Define groups at any level
- Assign roles to groups
- Filter roles at any level



Authentication Features

Provides group details
(Optional)

Supports group lookup
(Optional)

Feature

✓ Per-project configuration

✓ Per-object configuration

✓ Subtractive permissions model

✓* Supports external groups

✓ Local group definition

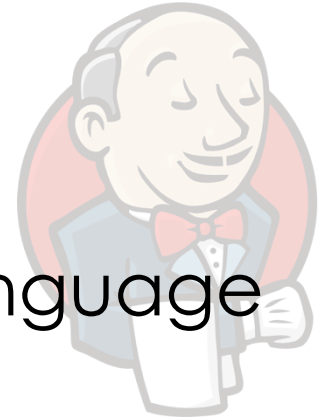
✓ Delegate management

RBAC Demo





Replicate Good Practices, Respond quicker to user requests: Templates



- Talk in the users domain specific language
 - Shield them
- Capture sameness of jobs, build steps
 - Replicate them
- Faster route to success
 - building plugins without writing code



Types of Templates

- Builder Template
- Job Template
- Folder Template
- Auxiliary Template



Templates Demo





Ensure Compliance: Custom Update Centers

- Teams often encounter the uh-oh moments
- Uh-oh moments
Usually happen a week before release

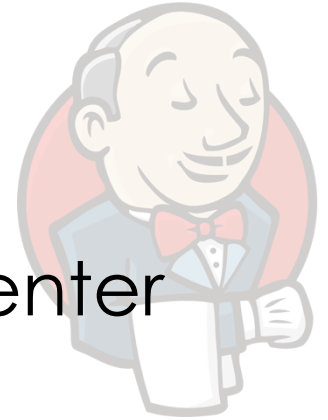


Tester: Your stuff does not work
Developer: What do you mean? I tested this...
Tester: Does not work with foo 1.4
Developer: I tested this with foo 1.3
Tester: 1.4 is what we have committed to
Developer: uh oh...





Custom Update Center



- Easy to create your own update center
- Host your plugin or binaries
- Inherit from upstream update centers
- Specify version number of binaries or plugins to be promoted



Update Center Demo



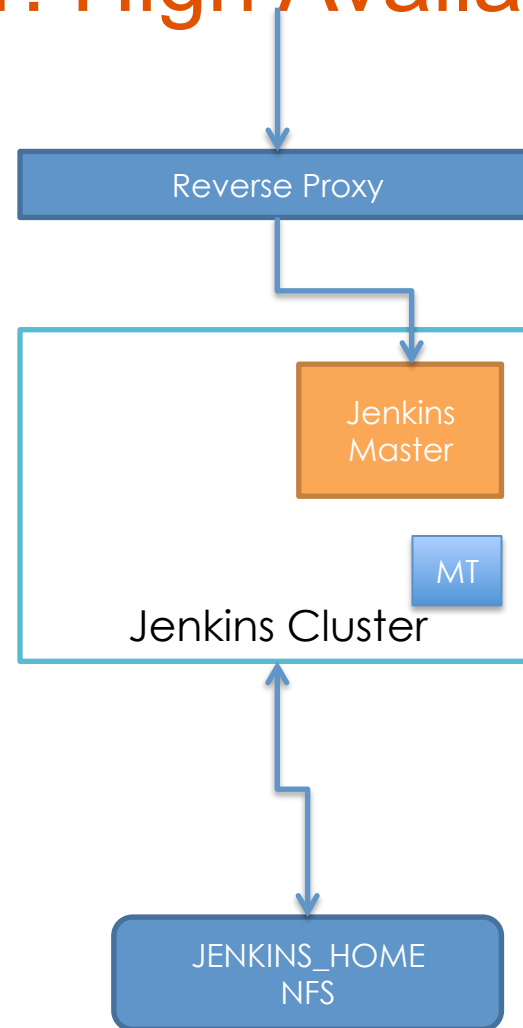
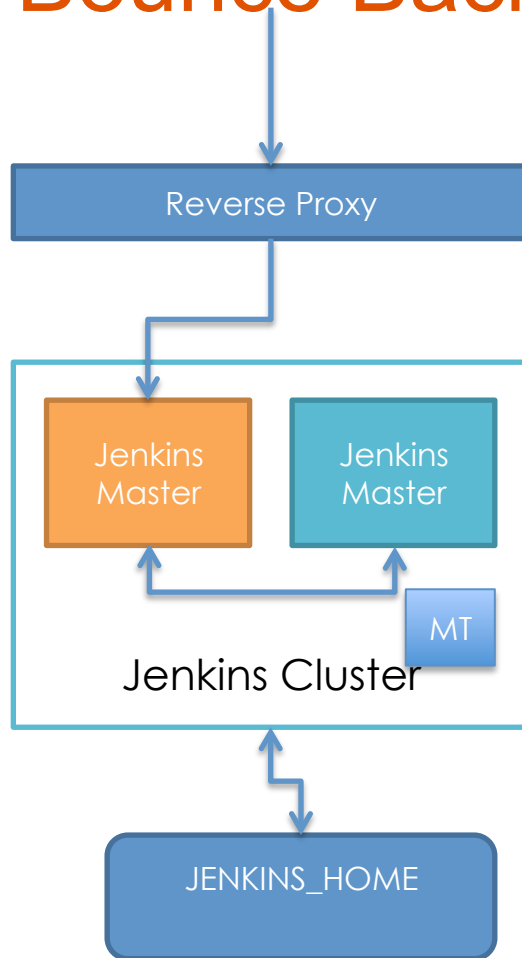
Bounce back from failures

Backup your stuff...

- Backup plugin from CloudBees
- Backup to cloud
 - Free CloudBees Plugin Gateway



Bounce Back Faster: High Availability



Demo





Prevent Failures: Validated Merge



- Shield your repository
- Rely on Jenkins...
 - Push your code to Jenkins
 - Jenkins builds, verifies and merges with upstream
- Result
 - No downtime due to bad commits
 - Tremendous productivity boost

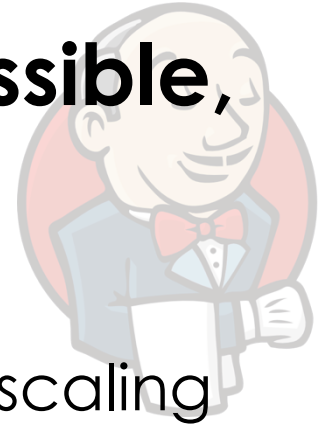
Everything should be as fast as possible, if not faster...

Speed up builds

- Fast Archiver
- Throttle Build Execution
- Even Load Strategy

Provision faster

- VMWare Auto-scaling plugin





Smart Management of Jenkins

FROM GOOD TO SMART



That is You!



Offload to Cloud(Bees)



- No machine management
- Provisioning Jenkins masters faster
- You work to Jenkins console
 - Not a VM management UI
- Pay by the minute not by the hour
- Code repositories
- Maven repositories
- Team based

The CloudBees Ecosystem

The CloudBees Ecosystem brings cloud-based services from partner companies directly to Java developers, all within the CloudBees platform...



If you don't already have a CloudBees account, sign up - it's free.

Learn more about the CloudBees Platform. <http://cloudbees.com>

Try It: <http://cloudbees.com/platform-ecosystem.cb>

RUN@Cloud Services

Tools to manage and support cloud deployment



New Relic

Real-time web monitoring and analytics, delivered as a service

Standard FREE
Pro \$0.29/server/hour



Cloudant

Reliable, distributed Database-as-a-Service, based on Apache CouchDB

Oxygen FREE
Argon \$15/mo
Neon \$39/mo
Helium \$119/mo
Krypton \$399/mo



MongoHQ

Fast and dependable MongoDB in the cloud

Sandbox FREE
Small \$15/mo
Large \$49/mo
Replica Set Extra Large \$300/mo



Papertrail

Hosted log management for apps, servers, and cloud services

Free FREE
1 GB \$7/mo
2 GB \$18/mo
4 GB \$35/mo
8 GB \$75/mo

DEV@Cloud Services

Development services for building applications



Sauce Labs OnDemand

Manual and Selenium-driven cross-browser testing on the cloud

Commercial Plus FREE until 9/20



JFrog

Your Binary Repository in the cloud

Basic \$75/mo
Pro \$85/mo
Enterprise \$98/mo



SonarSource

Continuous inspection of source code in the cloud using Sonar

Sonar Professional \$20/mo



XWiki Cloud

The next generation cloud wiki that's easy to use and easy to organize

Basic Free
Small \$149/mo
Medium \$299/mo
Big \$599/mo



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DEV@cloud Demo





Continuous Deployment



- Continuous Integration is not enough
- Once code is built it should be deployed automatically
- You should move the entire development-deployment cycle to the cloud

Jenkins Enterprise: Quick Overview



Large Installation

- Folders
- Templates
- Backup
- High Availability*
- Custom Update Centers*
- Validated Merges*

Security

- Roles-based Access Control
- Wikitext Descriptions
- Secure Copy*

Optimized Utilization

- Auto-scaling for VMWare installations
- Throttled Build Execution
- Even Load Strategy
- Skip Next Build
- Fast Archiving*

* Released Today: May17th 2012

If there is one thing you take away from here

- Download the free Folders and Backup plugin
 - From Jenkins Update Center – CloudBees Plugin Gateway











Day: A period of 24 hours, mostly misspent...



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Feature Matrix



	Active Directory	Atlassian Crowd	Jenkins' own DB	LDAP	OpenID	Unix PAM
Supports signup	-	-	✓	-	-	-
Provides group details	✓	✓	-	✓	✓	✓
Supports group lookup	✓	-*	-	✓	-	✓
Can logout	✓	✓	✓	✓	✓	✓

Example: Builder



Build

Add build step ▼

Copy artifacts from
Execute Windows batch
Execute shell
Invoke Ant
Invoke top-level Ma
Trigger/call builds o
Wakeup someone

Archive the artira

☐ Build other projec

ID

Display Name

Type

Inline Help

ID up?

Display Name

Type

Inline Help

ID

Display Name)wyy1:

Type

morpheus will wakeup harpreet after 10

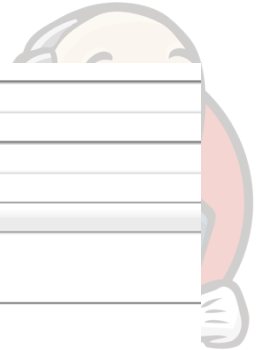
Transformer

Generates a shell script to execute (via Groovy)

Groovy Template + Shell Script

```
echo ${source} will wakeup ${target} after ${zzz}
sleep ${zzz}
echo Wakeup ${target}, this is ${source}
```





Property

☒ Replace 'Build Now' with other text

Text

Wake em up

☒ Use custom pronoun instead of job/project

Jo

Text

Alarm

Transformer

Jelly-based transformation

Script

```
<?xml version='1.0' encoding='UTF-8'?>
<project>
  <actions/>
  <description></description>
  <keepDependencies>false</keepDependencies>
  <properties/>
  <scm class="hudson.scm.NullSCM"/>
  <canRoam>true</canRoam>
  <disabled>false</disabled>
  <blockBuildWhenDownstreamBuilding>false</blockBuildWhenDownstreamBuilding>
  <blockBuildWhenUpstreamBuilding>false</blockBuildWhenUpstreamBuilding>
  <triggers class="vector"/>
  <concurrentBuild>false</concurrentBuild>
  <builders>
    <com.cloudbees.hudson.plugins.modeling.impl.builder.BuilderImpl.fbfd37a5-a197-494a-b596-cd88f6f83131>
      <values>
        <entry>
          <string>source</string>
          <string>${source}</string>
        </entry>
        <entry>
          <string>zzz</string>
          <string>${time}</string>
        </entry>
        <entry>
          <string>target</string>
          <string>${target}</string>
        </entry>
      </values>
    </com.cloudbees.hudson.plugins.modeling.impl.builder.BuilderImpl.fbfd37a5-a197-494a-b596-cd88f6f83131>
  </builders>
  <publishers/>
  <buildWrappers/>
</project>
```

Whose job is to set the alarm up? Trinity

Save

ID

time

Display Name

Time to wakeup after?

Type

Text-field

Inline Help

ID

target

Display Name

Who do I wake up?

Type

Text-field

Inline Help

ID

source

Display Name

Whose job is to set the alarm up?

165

Type

Text-field



Example: Creating templates



☐ **Auxiliary Template**

Auxiliary templates are used to create nested structures emulating a directory structure. For example, you can create an auxiliary template called "Track", and then your "CD" would have a "Track" sub-template.

☐ **Builder Template**

Builder template lets you define a custom builder by defining a set of build steps. This allows you to create a locked down version of a builder.

☐ **Folder Template**

A folder template is useful to model a domain-specific concept, such as a project or a team.

☐ **Job Template**

A job template is useful to create a large number of jobs that share common build steps. When the template is updated, all the jobs created from the template are updated.

Welcome to our new Services Ecosystem!

My Services



Repositories



Jenkins Builds



Applications



Databases



More Services



CloudBees Blog

- Lose It! CEO Charles Teague Extols Value of PaaS
- JUC: All Our Ducks Are in a Row!
- Making the Most of Jenkins CI
- Continuous Integration with Subversion and Jenkins
- Master Jenkins and Accelerate Application Development: September 23 in London, October 14 in Tokyo!
- Recent Google App Engine News: Think Beyond Pricing...
- Jenkins User Conference Weather Report
- Bees Outside the Hive
- API Token in Jenkins REST API
- Jenkins internal: Action and its subtypes

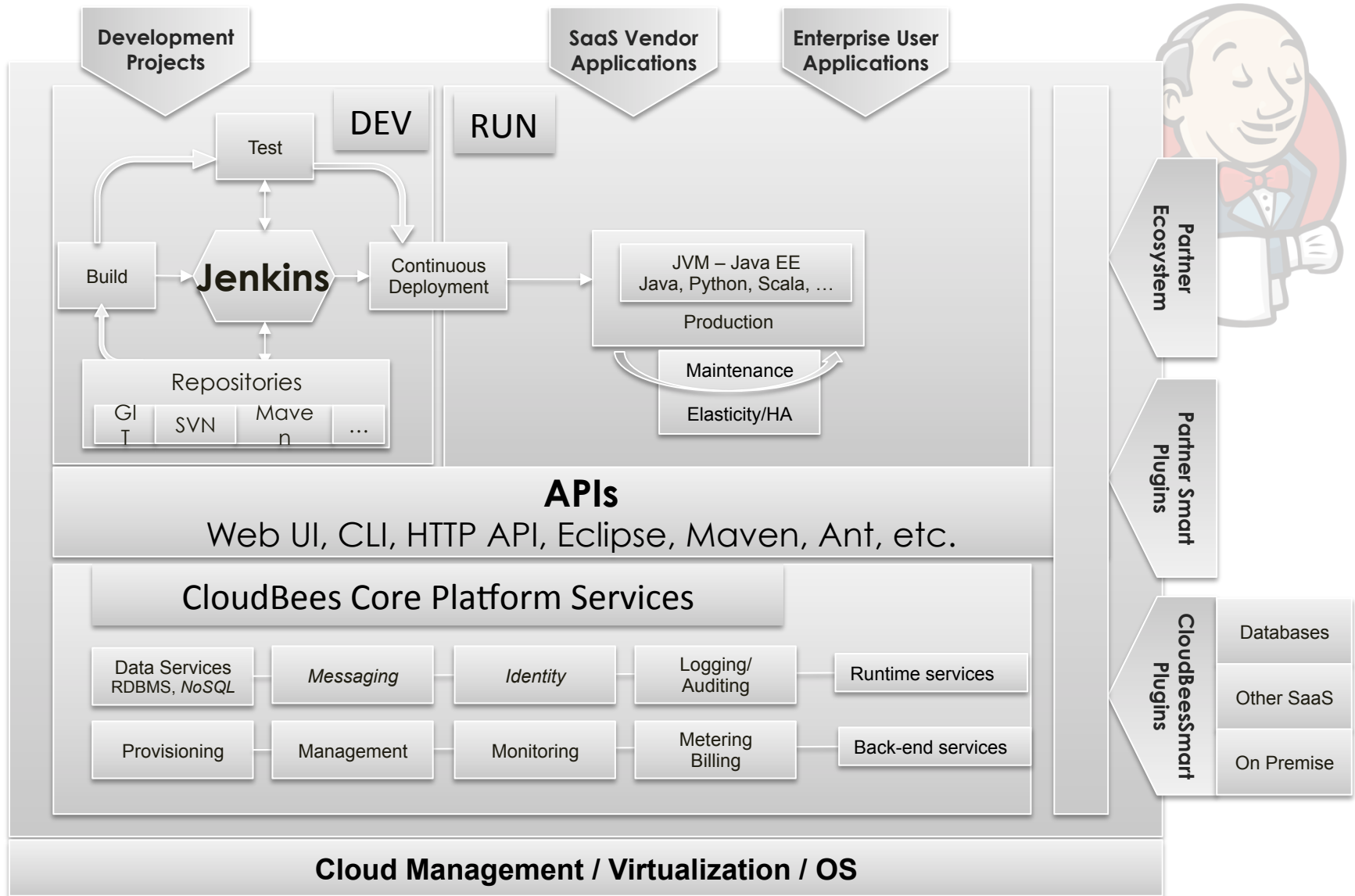
Getting Started

Knowledge Base

- CloudBees Wiki
- DEV@cloud Docs
- RUN@cloud Docs

Downloads

- CloudBees Eclipse Tools
- CloudBees SDK



CloudBees Platform as a Service

Smart Management




In the cloud














On Premises






[Home](#)[Services](#)[Subscriptions](#)[Support](#)[Account](#)[Logout](#)[Jenkins](#)[ENABLE AUTO REFRESH](#) [New Job](#) [Manage Jenkins](#) [People](#) [Build History](#) [Project Relationship](#) [Check File Fingerprint](#) [My Views](#)**Build Queue**

No builds in the queue.

[Build Executor Status](#)

All +						
S	W	Job ↓	Last Success	Last Failure	Last Duration	
		Continuous Deployment Example	3 mo 13 days (#7)	3 mo 13 days (#5)	47 sec	
		JAX	2 mo 25 days (#5)	2 mo 26 days (#2)	44 sec	
		simpletest	7 mo 14 days (#2)	N/A	0.59 sec	
		SimpleTestApp	N/A	N/A	N/A	

Icon: [S](#) [M](#) [L](#)[Legend](#)  [RSS for all](#)  [RSS for failures](#)  [RSS for just latest builds](#)

Jenkins on CloudBees



Why in the cloud?



- Build machines always available when you need them, lowers CAPEX
- Scale DUO – Pay for what you use, when you need it
- Integration between CI modules reduces dev complexity, lowers OPEX
- Seamless integration to runtime PaaS
- Continuous Deployment Capability

Jenkins Enterprise: Quick Overview



Shielding Jenkins from failures	Securing Jenkins and jobs	Organizing Jenkins	Speeding builds	Preventing failures	Skip Next
<ul style="list-style-type: none">• High Availability• Backup	<ul style="list-style-type: none">• Roles-based Access Control• Wikitext Descriptions• Secure Copy	<ul style="list-style-type: none">• Folders	<ul style="list-style-type: none">• Auto-scaling for VMWare installations• Throttled Build Execution• Even Load Strategy• Fast Archiving	<ul style="list-style-type: none">• Git Validated Merge	

* Released Today: May17th 2012